

To: Gullett, Brian[Gullett.Brian@epa.gov]
Cc: CHIRAYATH, VED (ARC-SG)[ved.chirayath@nasa.gov]; Roderick, William R. (ARC-SG)[Bay Area Environmental Research Institute][william.r.roderick@nasa.gov]; Fladeland, Matthew M. (ARC-SG)[matthew.fladeland@nasa.gov]; Aurell, Johanna[Aurell.Johanna@epa.gov]; Mitchell, Bill[mitchell.bill@epa.gov]; Greenwell, Dale[greenwell.dale@epa.gov]; Jay Stewart (US SSA) (jay.stewart@baesystems.com)[jay.stewart@baesystems.com]; Davie, Robert N. (robert.n.davie4.civ@mail.mil)[robert.n.davie4.civ@mail.mil]; Jennings, Ross B CIV (US) (ross.b.jennings.civ@mail.mil)[ross.b.jennings.civ@mail.mil]
From: Instrella, Ron (ARC-SG)[Bay Area Environmental Research Institute]
Sent: Tue 8/16/2016 6:11:43 PM
Subject: Re: NASA EPA Collaboration - Radford Virginia.

Hi Brian,
Sounds good. Flights (3-5 min) on each pair separately sounds doable on our end, although as Ved had mentioned 750m is a bit far. I also had a chance to chat with Matt Fladeland about prospective flight paths. Would you like us to traverse the plume in a raster pattern, or would you prefer us to hover over the plume and manually follow it with wind changes (or perhaps some combination of both)?

Thanks,
Ron

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Ronald Instrella
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On Aug 16, 2016, at 4:18 AM, Gullett, Brian <Gullett.Brian@epa.gov> wrote:

Ron,
At a minimum I think we are expecting three pairs of pans each day (i.e., three flights). As this is “hit or miss” I’m hoping that RFAAP will get permission from VA DEQ (?) to burn the same amount of material per day in more pans, which would give us more flights and, hopefully, improve our sampling efficiency.
Brian

From: Instrella, Ron (ARC-SG)[Bay Area Environmental Research Institute]
[mailto:ron.instrella@nasa.gov]
Sent: Monday, August 15, 2016 6:41 PM
To: Gullett, Brian <Gullett.Brian@epa.gov>
Cc: CHIRAYATH, VED (ARC-SG) <ved.chirayath@nasa.gov>; Roderick, William R. (ARC-SG)[Bay Area Environmental Research Institute] <william.r.roderick@nasa.gov>; Fladeland, Matthew M. (ARC-SG) <matthew.fladeland@nasa.gov>; Aurell, Johanna <Aurell.Johanna@epa.gov>; Mitchell, Bill <mitchell.bill@epa.gov>; Greenwell, Dale <greenwell.dale@epa.gov>; Jay Stewart (US SSA) (jay.stewart@baesystems.com) <jay.stewart@baesystems.com>; Davie, Robert N. (robert.n.davie4.civ@mail.mil) <robert.n.davie4.civ@mail.mil>; Jennings, Ross B CIV (US) (ross.b.jennings.civ@mail.mil)

<ross.b.jennings.civ@mail.mil>

Subject: Re: NASA EPA Collaboration - Radford Virginia.

Google Earth shows the location of the eight pairs of burn pans at
Assuming this means burns in adjacent pairs, what's the expected time between
burns? Thanks again.

I'm also working off of Table 2-3 from the assurance plan, which provides helpful
info as well.

-Ron

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On Aug 15, 2016, at 3:35 PM, Instrella, Ron (ARC-SG)[Bay Area
Environmental Research Institute] <ron.instrella@nasa.gov> wrote:

Hi Brian,

Thanks for the information and the current draft of the Quality Assurance
Project Plan.

I've attached a screenshot of Google Earth using the coordinates your
provided. Thanks for providing information about the distance between first and
last pan, and the distance to the river. I'll use this information and coordinates
to draft up a few flight paths in our mission planner. I'll prepare a few raster
patterns orthogonal to the plumes, and aim to get the flight time between 3 to 5
min.

What is the expected number of plumes (all active or some dormant?) during
our flights? Does this vary between flights?

Cheers,
Ron

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<Screen Shot 2016-08-15 at 3.19.21 PM.png>

On Aug 12, 2016, at 5:16 AM, Gullett, Brian <Gullett.Brian@epa.gov>
wrote:

Hi, Ron.

I'm glad to hear that your Samoa flights went well.

I've attached the current version of the Quality Assurance Project Plan which is awaiting comments from Radford Army Ammunition Plant and their contractor, BAE. This has some logistical information within.

Google Earth shows the location of the eight pairs of burn pans at

37°11'31.59"N 80°31'27.58" W elev. 1701 ft bordered on the north by a ridge line of trees and the south by the New River.

We'll be commencing test flights the morning of Monday, September 19. Because the burns are of such short duration (perhaps 60 seconds) we'll need to sample as much as possible to hopefully exceed analyte detection limits so it's important to be coordinated between observers and the pilot. As planned, we'll sample for two weeks, ending Friday, September 30th, breaking for the weekend between. Weather permitting, we'll sample every day. I believe that typically their burns are in the morning and I'd anticipate we'll have around three to four flights of 3-5 min duration each. The linear distance between the first and last pan is less than 500 m and the distance to the river and ridge line is 50-100 m. The likely pilot location is at the group of small buildings to the east of the burn pans. Hopefully Radford will be able to arrange an observer location orthogonal to the line of pans to better enable positioning of the UAS within the plume. Likely the furthest range of the UAS from the pilot would be with an easterly wind, perhaps 750 m at most. The shortest range of the UAS would be a north or south wind, boundaries being the trees on the ridge to the north and the south side of the river to the south (unless the land across the river is Army land, I'm not sure). I don't have a wind rose for the September timeframe; the Jan/Feb windrose for the New River Valley Airport had about 50% of the winds out of the WSW – WNW.

We likely will be staying at the Holiday Inn Christiansburg/Blacksburg located at 99 Bradley Dr., Christiansburg, VA 24073, 540-381-8100. I've stayed there before and it's convenient, perhaps a 10 min ride from RFAAP.

I'd like to arrange a conference call but am waiting to receive feedback from RFAAP and BAE on their QAPP comments and availability.

Let me know if you have any further questions and don't hesitate to call.

Brian

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From: Instrella, Ron (ARC-SG)[Bay Area Environmental Research Institute]
[mailto:ron.instrella@nasa.gov]
Sent: Thursday, August 11, 2016 2:49 PM
To: Gullett, Brian <Gullett.Brian@epa.gov>
Cc: CHIRAYATH, VED (ARC-SG) <ved.chirayath@nasa.gov>; Roderick, William
R. (ARC-SG)[Bay Area Environmental Research Institute]
<william.r.roderick@nasa.gov>
Subject: NASA EPA Collaboration - Radford Virginia.

Hi Brian,

I hope you're doing well. Our group recently returned from a successful mission with our aircraft in Ofu, American Samoa, and are now shifting gears to prepare for our upcoming gas sensor testing in Radford. Over the next two weeks, our team will finish preparing the gas sensor payload interface for our aircraft. I am wondering whether you could provide information about trip logistics to help us prepare. As of now, I understand that our group will travel starting the week of September 19th.

A few questions on our end: How many days of flights do you envision we'll need to collect the necessary data? Could this be done between the 19th and 23rd (5 days)? I'd also like to get some information about the range to get an idea of prospective flight paths. You might have included

this in a previous email with the flight quality assurance plan, but let me know if you have any updated as well.

Let me know if you'd like any additional information from our end as well.
Looking forward to this collaboration. Thanks again.

Regards,
Ron

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<QAPP Radford edits BG2 08-04-2016.docx>